REMARKS

By the *Office Action* of 30 November 2004, Claims 1-97 are pending in the Application, Claims 1-20, 22-23, 25-48, and 50-94 withdrawn, and Claims 21, 24, 49, and 95-97 rejected. By the present *Response and Amendment*, the Applicant amends Claim 21 and leaves unchanged Claims 24, 49, and 95-97. The pending Claims are believed novel and non-obvious over the cited art.

No new matter is believed introduced by the present *Response and Amendment*. It is respectfully requested that the present amendments be entered, and respectfully submitted that the present Application is in condition for allowance for the following reasons.

1. Docket Number and Change in Correspondence Address

Applicant respectfully requests the docket number of this Application be changed from 07648.0025 to GTRC152. The prosecution of this Application has been transferred to a new law firm, and its docketing procedures would benefit with this new docket number. A *Revocation and Appointment of Power of Attorney* to the present firm, and a *Change of Correspondence Address* is filed concurrently in the USPTO to reflect that the new law firm is now prosecuting this Application.

The new Applicant, as noted in the *Assignment* recorded at Reel 015354, Frame 0224, is a small entity. Should a *Notice of Allowability* issue, please have such noted.

2. Claim Rejections under 35 U.S.C. § 112

The Examiner states that Claims 21, 24, and 95 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. *Office Action*, page 2. Applicant amends Claim 21 to make more clear and definite the intension of the claimed subject matter. Claim 21 is currently amended to reflect that the culture media comprises "a gibberellin inhibitor" and "a component selected from the group consisting of conifer megagametophyte and a conifer zygotic embryo". As amended, Applicant respectfully submits that the Claim is now definite and clear. Claims 24 and 95 depend upon Claim 21.

It is respectfully submitted that the pending Claims upon entrance of this *Response and Amendment* now present Claims in form for allowance.

3. Claim Rejections under 35 U.S.C. § 102

The Examiner states that Claims 21 and 95 are rejected under 35 U.S.C. 102(b) as being anticipated by Acevedo et al. (Acevedo, Elba, et al., "Regulation of alpha-amylase isoenzyme expression in Araucaria araucana by gibberellic and abscisic acids." Phytochemistry (Oxford), 44(8): p. 1401-1405, (1997)). *Office Action*, page 3. Specifically, the Examiner states that Acevedo et al. "teach[es] a culture medium comprising 20 mM β-chloroethyltrimethylammonium" (more commonly known as CCC or Cycocel, hereinafter referred to as "CCC") and "embryos and mega-gametophytes of *Araucaria araucana*." *Id.* The Examiner further states that "CCC is a known gibberellin inhibitor" and that "*A. araucana* is a South American conifer in the *Order Coniferales, Family Araucariaceae*". *Id.* Applicant respectfully submits that Acevedo et al. neither teaches nor anticipates the currently claimed invention of Claims 21 and 95 as amended.

Acevedo et al. teaches that "...the main objectives of the present work were to investigate whether the increase in the expression of α-amylase isoforms after 90 hr of imbibition is regulated by gibberellin..." *See page 1401.* Acevedo et al. teaches use of the CCC simply as a very particular tool, namely as a specific inhibitor of gibberellic acid, in order to investigate the effect of gibberellin on the expression of α-amylase isoforms. Applicant submits that teaching of Acevedo et al. as distinctly recited in both the results and discussion of their paper is that addition of CCC to culture medium of either of both embryos and mega-gametophytes inhibits the production of α-amylase isoforms, and that the inhibition of the production of α-amylase isoforms can be restored by treating the cultures by adding gibberellic acid to the culture medium. *See pages 1401-1403 and, in particular, on page 1403, the first paragraph beginning on column two.*

Acevedo et al. provides teaching regarding the use of CCC to examine the specific effects of CCC on production of α-amylase isoforms in embryos and megagametophytes of *Araucaria araucana* seedling after a limited 90 hour treatment. The teaching of Acevedo et al. is limited to the unsurprising use of gibberellin inhibitors to examine the specific role of gibberellin in a limited biochemical phenomenon, namely production of α-amylase isoforms. Acevedo et al. does not provide any teaching or anticipation regarding the unexpected result that gibberellin inhibitors are useful for initiating and maintaining conifer embryogenic cultures comprising megagametophytes or zygotic embryos. Further, Acevedo et al. does not provide any teaching or

anticipation regarding the use of CCC for initiating, capturing, maintaining or multiplying embryogenic cultures of coniferous plants.

The Examiner also states that 20 mM of CCC is equivalent to 3.16 ppm, and cites a reference from www.sigmaaldrich.com. *Office Action*, page 3. Applicant respectfully submits that 20 mM of CCC is not equivalent to 3.16 ppm. The reference provided by the Examiner does show directly that CCC has a molecular weight of 158.1 and that a 1 milligram per liter solution has a concentration of 6.33 micromolar. *See page 3.* However, the reference does not explicitly state or show concentration for CCC in ppm. Applicant submits that in terms of equating ppm to a solution concentration, a solution with a concentration of 1 ppm is generally understood to have 1 gram of substance for every million grams of solution. In terms of aqueous solutions, such as a culture medium, because the density of water is 1 gram per milliliter, that given the small amount of solute at 1 ppm, the density of the solution remains nearly 1 gram per milliliter. Thus, in general, 1 ppm means 1 gram of solute per 1 million milliliters of solution, or in other words, 1 milligram per 1 liter of solution.

Based upon the foregoing discussion, Applicant respectfully submits that a 20 mM solution of CCC would contain 3.162 grams of CCC per liter solution, or a 3162 ppm solution. In contrast, the Applicant's current invention recites in the *Specification* that media "may contain a gibberellin inhibitor at a concentration of between 0.001 to 500, 0.01 to 50, or 0.1 to 5.0 ppm, or any concentration subsumed within those ranges." *See page 14, paragraph 32.* Applicant submits that the concentration taught by Acevedo et al. is a high concentration of CCC that is well outside the ranges recited in *Specification* of the Applicant's application.

Applicant respectfully submits that Acevedo et al. does not teach or anticipate the presently claimed invention.

4. Claim Rejections under 35 U.S.C. § 103

The Examiner states that Claims 24, 49, 96 and 97 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Acevedo et al., and makes reference to the teachings as set forth in the discussion by the Examiner of the rejection under 35 U.S.C. § 102(b). *Office Action*, page 3.

The Examiner states Claim 24 is obvious is view of Acevedo et al. because "paclobutrazol (Bonzi) is also a gibberellin inhibitor known in the art", and that "...one would be motivated to substitute paclobutrazol for CCC for a variety of reasons..." *Office Action*, pages 3-4. For the reasons stated above, Applicant respectfully submits that Acevedo et al. teaches

only the use of CCC as an inhibitor of the production of α-amylase isoforms after a limited treatment with the same. Further, as discussed in detail previously, Applicant submits Acevedo et al. does not provide any teaching or anticipation regarding the use of CCC for initiating, capturing, maintaining or multiplying embryogenic cultures of coniferous plants. As such, a person of ordinary skill in the art at the time the invention was made would not have been reasonably motivated to substitute paclobutrazol for CCC.

The Examiner states that Claim 49 is obvious in view of Acevedo et al. because a previously initiated somatic embryo would develop in cell culture in the same way a mega-gametophyte or zygotic embryo would. *Office Action*, page 4. For the reasons stated previously, Acevedo et al. does not teach, anticipate or make obvious the use of gibberellic acid inhibitors as recited in the currently claimed invention. Rather, Acevedo et al. teaches only the use of CCC as an inhibitor of the production of α-amylase isoforms after a limited treatment with the same.

The Examiner states that Claims 96 and 97 are obvious in view of Acevedo et al. for "the reasons set forth in the explanations of why Claims 24 and 49 are obvious, and because a person of ordinary skill in the art would be motivated to optimize the concentration of GA_3 inhibitor within any effective set of concentrations known in the art..." Applicant respectfully submits, as discussed in detail above, that the concentrations set forth in Acevedo et al. are high concentrations, and certainly much higher than the concentrations taught and claimed in the current invention. Applicant submits that it would not be obvious to a person of ordinary skill in the art to make the leap from concentrations taught by Acevedo et al. which are at a level to specifically inhibit gibberellic acid and observe the consequent biological effects of such inhibition, to the concentrations of the presently claimed invention. As such, Applicant submits was not prima facie obvious to one skilled in the art.

Applicant respectfully submits that the currently claimed invention is neither anticipated nor made obvious by the disclosures of Acevedo et al.

5. Fees

The new Applicant, as noted in the *Assignment* attached to the *3.73(b) Statement*, is a small entity.

There are no Claim fees believed due, as the total remaining Claims upon entrance of this *Response and Amendment* remains unchanged.

Further, this *Response and Amendment* is being filed within six months of the *Office Action*, namely within three months, and thus no extension of time fee is believed due.

Nonetheless, should any fees indeed be due, authorization to charge deposit account No. 20-1507 is hereby expressly given.

CONCLUSION

By the present *Response and Amendment*, the Application has been in placed in full condition for allowance. Accordingly, Applicant respectfully requests early and favorable action. Should the Examiner have any further questions or reservations, the Examiner is invited to telephone the undersigned Attorney at 404.885.2773.

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Signature

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